

Remarks

I. Request for additional information regarding Background of Invention

The examiner has requested additional information regarding items in the background of the invention. The applicant hereby states that he does not have at this time or cannot readily obtain any additional information regarding the items in the background of the invention.

II. Request for Support for Language added to Each Amended Claim or Provided in New Claim

The examiner has requested support for language added to each amended claim or as shown in each new claim.

The claims are shown below with language previously added by amendment or by previously added claims of July 15, 2005 underlined and with support shown in parenthesis:

1. A pyrotechnic device for simulating weapons firing and/or hit indications comprised of:

a magazine having a plurality of receptacles for receiving a plurality of corresponding blank ammunition rounds,

(Present application: pg. 2, first paragraph, blank ammunition)

a stand including a base connected to a section; and

(Present application: Fig. 5, p. 5, last paragraph – pg. 6, first paragraph, stand 100 includes a base or base frame 110 connected to a section or tiltable top frame 104)

wherein the section is connected to the base in a manner which allows the section to be tilted with respect to the base;

(Present application: a section, such as tiltable top frame 104 is

connected to the base or base frame 110 in a manner which allows the section 104 to be tilted with respect to the base or base frame 110, Fig. 5, p. 5, last paragraph – p. 6, first paragraph).

and further comprising means for attaching the magazine to the section so that when the section is tilted with respect to the base the magazine is also tilted with respect to the base.

(Present application: Means are disclosed, such as latch assembly 102a and latch assembly 102b for attaching the apparatus 10 (which includes the magazine 20) to the section or frame 104, so that when the section or frame 104 is tilted with respect to the base or base frame 110, the magazine 20 is also tilted with respect to the base frame 110; Figs. 5 and 6; pg. 4, last paragraph, pg. 5, first paragraph).

2. The pyrotechnic device of claim 1, wherein

the magazine can receive a plurality of blank ammunition rounds of a first type, a plurality of blank ammunition rounds of a second type, or a combination of a plurality of blank ammunition rounds of the first type and the second type.

(Present application: The magazine 20 can receive a plurality of blank ammunition rounds of a first type, such as round 80 in Fig. 12, a plurality of blank ammunition rounds of a second type, such as round 81 in Fig. 11, or a combination of a plurality of blank ammunition rounds of the first type and the second type; Pg. 8, lns. 8-10; Fig. 1, Figs. 11, 12, pg. 9, last paragraph – pg. 10, first paragraph, pg. 14, first paragraph, pg. 15, last paragraph, pg. 17, last paragraph).

3. The pyrotechnic device of claim 1 further comprising

a top plate having a plurality of contacts corresponding to the plurality of receptacles of the magazine;

(Present application: A top plate 30 is provided having a plurality of contact assemblies 300 corresponding to a plurality of receptacles 23 of the magazine 20. (Figs. 1, 3, 4, pg. 8, second paragraph; pg. 12, last paragraph – pg. 13, first paragraph)

a means of aligning and securing the magazine to the top plate in which the plurality of corresponding blank ammunition rounds are ohmically spaced to receive the plurality of

contacts of the top plate, wherein all of the plurality of blank ammunition rounds are simultaneously in ohmic contact with the their corresponding contacts of the top plate; and wherein the top plate connects the magazine to the section of the stand.

(Present application: Means such as features 25a, 25b, 27a, and 27b secure and aligned the magazine 20 with the top plate 30, pg. 6, third paragraph. Blank ammunition rounds can be used, pg. 1, last paragraph, pg. 2, first paragraph. All of the blank ammunition rounds, such as rounds 80 or 81 are simultaneously in ohmic contact with their corresponding contacts of the top plate 30 and the top plate 30 connects the magazine 20 to the section or tiltable frame 104 of the stand 100 in Fig. 6.)

4. A pyrotechnic device for simulating weapons firing and/or hit indications comprised of:
a magazine having a plurality of receptacles for receiving a plurality of
corresponding blank ammunition rounds;

(Present application: A pyrotechnic device or apparatus 10 for simulating weapons firing and/or hit indications is disclosed. Fig. 1, pg. 1, last paragraph – pg. 2, first paragraph. The apparatus 10 is comprised of a magazine 20 having a plurality of receptacles or bored holes 23 for receiving a plurality of corresponding blank ammunition rounds. Fig. 1, pg. 11, second paragraph, pg. 2, first paragraph.

a top plate having a plurality of peripheral conductive discs located thereon
corresponding in number to the plurality of receptacles;

(Present application: A top plate 30 having a plurality of peripheral conductive discs, such as peripheral conductive disc 304a, corresponding in number to the plurality of receptacles 23 is disclosed. Fig. 1, Fig. 3, pg. 12, last paragraph.)

wherein the magazine can be placed on the top plate such that each of the
plurality of receptacles is located over a corresponding one of the plurality of peripheral
conductive discs;

(Present application: The magazine 20 can be placed on the top plate 30 such that each of the plurality of receptacles 23 is located over a corresponding one of the plurality of peripheral conductive discs, such as 304a. Id.)

and wherein each of the plurality of blank ammunition rounds can be placed in a corresponding one of the plurality of receptacles so that a first contact of each of the plurality of blank ammunition rounds is in ohmic contact with a corresponding one of the plurality of peripheral conductive discs.

(Present application: Each of the plurality of blank ammunition rounds, such as ammunition rounds 80 or 81, can be placed in a corresponding one of the plurality of receptacles 23 so that a first contact, such as outer contact post 409 of pyrotechnic round 80 or outer contact post 406 of round 81, of each of the plurality of ammunition rounds, makes ohmic contact with a corresponding one of the plurality of conductive discs, such as 304a. Pg. 8, second paragraph, Figs. 3, 10, 11, and 12.)

5. The pyrotechnic device of claim 4 wherein

the top plate includes a plurality of center conductive disc pads corresponding to the plurality of peripheral conductive discs and wherein each center conductive disc pad is located at the center of the plurality of peripheral conductive discs;

(Present application: The top plate 30 includes a plurality of center conductive disc pads, such as 302a, corresponding to the plurality of peripheral conductive disc pads 304a, and each center conductive disc pad 302a, is located at the center of its corresponding one of the plurality of peripheral conductive discs pg. 8, second paragraph, Fig. 3)

wherein there is electrical insulation between each of the plurality of center conductive disc pads and a corresponding one of the plurality of peripheral conductive discs;

(Present application: There is electrical insulation, such as a nylon flange bushing 306a between each of the plurality of center conductive disc pads, such as 302a and a corresponding one of the plurality of peripheral conductive discs, such as 304a. Fig. 10, pg. 8, last paragraph – pg. 9, first paragraph).

and wherein each of the plurality of blank ammunition rounds can be placed in a corresponding one of the plurality of receptacles so that a second contact of each of the plurality of blank ammunition rounds is in ohmic contact with a corresponding one of the plurality of center conductive disc pads while the first contact of the respective blank ammunition round is in ohmic contact with the corresponding one of the plurality of peripheral

conductive discs.

(Present application: Each of the plurality of blank ammunition rounds, such as 80 or 81 can be placed in a corresponding one of the plurality of receptacles 23 so that a second contact of each of the plurality of blank ammunition rounds, such as contact 404 of round 81 in Fig. 11 or contact 407 of round 80 in Fig. 12, is in ohmic contact with a corresponding one of the plurality of center conductive disc pads, such as 302a, while the first contact of the respective blank ammunition round, such as contact 406 of round 81 or contact 409 of round 80, is in ohmic contact with the corresponding one of the plurality of peripheral conductive discs, such as 304a. (Pg. 8, second paragraph, Figs. 3, 10, 11, and 12).

6. A pyrotechnic device for simulating weapons firing and/or hit indications comprised of:

(Present application: Discloses a pyrotechnic device or apparatus 10. Fig. 1, pg. 1, last paragraph – pg. 2, first paragraph.)

a magazine having a plurality of receptacles for receiving a plurality of corresponding blank ammunition rounds:

(Present application: The apparatus 10 is comprised of a magazine 20 having a plurality of receptacles or bored holes 23 for receiving a plurality of corresponding blank ammunition rounds. Fig. 1, pg. 11, second paragraph, pg. 2, first paragraph.)

wherein in response to a command to fire at least two blank ammunition rounds at about the same time the pyrotechnic device fires a first blank ammunition round at a first time and a second blank ammunition round at a second time, wherein the difference between the first time and the second time is less than or equal to thirty milliseconds,

(Present application: Multiple rounds can be fired per que or fire command. Pg. 20: second paragraph – third paragraph; multiple rounds can be fired by firing a first round at a first time and a second round at a second time, wherein the difference is approximately thirty milliseconds. Pg. 18, last paragraph).

and wherein each of the first and the second blank ammunition rounds includes a bridgewire which causes the firing of the respective blank ammunition round, and wherein the pyrotechnic device causes a first application of current to the bridgewires of the first and second

blank ammunition rounds to fire the first and second blank ammunition rounds and wherein after firing the first and second blank ammunition rounds, the pyrotechnic device causes a second application of current to the bridgewires of the first and second blank ammunition rounds in order to burn out the bridgewires.

(Present application: Inside each round, such as round 80 or 81 is a bridgewire, which causes the firing of the respective blank ammunition round. Pg. 17, last paragraph – pg. 18, first paragraph. The pyrotechnic device 10 causes a first application of current to the bridgewires to fire and after firing causes a second application of current to the bridgewires to burnout the bridgewires. Pg. 18, first paragraph – pg. 19, first paragraph)

7. The pyrotechnic device of claim 6 wherein

the pyrotechnic device causes about six amps of current to be supplied for about five hundred milliseconds for each of the bridgewires of the first and second blank ammunition rounds in order to burn out each of the bridgewires.

(Present application: The pyrotechnic device or apparatus 10, causes about six amps of current to be supplied for about five hundred milliseconds for each of the bridge wires in order to burn out each of the bridgewires. Pg. 20, third paragraph – fourth paragraph).

8. The pyrotechnic device of claim 5 further comprising

an electronic housing:

(Present application: Device or apparatus 10 includes an electronic housing 70. Pg. 3, Ins. 13-17).

and wherein each of the plurality of center conductive disc pads is in ohmic contact with one of a plurality of conductive transfer posts; and

(Present application: Each of the plurality of center conductive disc pads, such as 302a, in Fig. 3, is in ohmic contact with one of a plurality of conductive transfer posts, such as 308a. Fig. 9 and 10, pg. 8, second paragraph)

wherein each of the plurality of conductive transfer posts runs through the top plate and into the electronic housing

(Present application: Each of the plurality of conductive transfer posts, such as 308a, runs through the top plate 30 and into the electronic housing 70. Fig. 10)

9. The pyrotechnic device of claim 8 further comprising

an interface circuit board;

(Present application: There is an interface circuit board, not shown, inside of the electronic housing 70. Pg. 8, Ins. 11-14).

wherein each of the plurality of conductive transfer posts is in ohmic contact with one of a corresponding plurality of bridge springs;

(Present application: Each of the plurality of conductive transfer posts, such as 308a, is in ohmic contact with one of a corresponding plurality of bridge springs, such as 314a. Fig. 10, pg. 13, last paragraph).

and wherein each of the plurality of bridge springs is ohmically in contact with an exposed area on the interface circuit board;

(Present application: Each of the plurality of bridge springs, such as 314a, is in contact with an exposed area on the interface circuit board, not shown. Pg. 8, Ins. 11-13).

and wherein a central processing unit can selectively fire any one of the corresponding plurality of blank ammunition rounds located in any one of the plurality of receptacles.

(Present application: A central processing unit, or CPU, can selectively fire any one of the corresponding plurality of blank ammunition rounds located in any one of the plurality of receptacles 23. Pg. 8, Ins. 14-15).

10. The device of claim 4 wherein

each of the plurality of peripheral conductive discs is made of conductive rubber.

(Present application: Claims 9 and 10 as initially filed specified "conductive rubber").

11. A pyrotechnic device for simulating weapons firing and/or hit indications comprising

a magazine comprised of a plurality of receptacles having a plurality of corresponding

bores for receiving a corresponding plurality of rounds of blank ammunition of a first type or a second type or a corresponding plurality of rounds of blank ammunition of a first type and a second type; :

(Present application: A magazine 20 is disclosed comprised of a plurality of receptacles 23, having a plurality of corresponding bores, such as bore 23a, 23b, 23c, for receiving a plurality of rounds of blank ammunition of a first type, such as round 80, or a second type such as round 81, or of both the first type and the second type. Fig. 1, pg. 3, second paragraph of detailed description, pg. 11).

wherein each bore has upper, middle, and lower sections:

(Present application: The bores, such as bore 23a, each have upper, middle and lower sections, such as sections similar sections at borings 25c, 25b, and 25a, Fig. 4, pg. 5, second paragraph)

wherein each upper section has a first diameter, each middle section has a second diameter, and each lower section has a third diameter:

(Present application: The boring 25a, or lower section, may have a diameter of approximately 1.337" and it accepts the diameter created by component 401 of Fig. 12. The boring 25b, or middle section, may have a diameter of approximately 1.263" and accepts the diameter created by component 400 of Fig. 11. The boring 25c, or upper section, is used to accept the diameters created by component 402 of Fig. 11 and Fig. 12 which are equal in size and may have a diameter of approximately 1.121". Pg. 5, second paragraph).

wherein the first diameter is less than the second diameter and the second diameter is less than the third diameter:

(Present application: The boring 25c, or upper section, may have a diameter of 1.121 inches which is less than the diameter of the boring 25b, which may be 1.263 inches. The boring 25b may have a diameter which is less than the diameter of the boring 25a which may be 1.337 inches. Pg. 5, second paragraph).

wherein the magazine has a top surface and a bottom surface, and wherein each upper section begins at the top surface and ends inside the respective bore, and wherein each lower section begins at the bottom surface and ends inside the respective bore:

(Present application: The magazine 20 has a top surface 20a and a

bottom surface 20b, and each upper section, such as at the boring 25c, begins at the top surface 20a and ends inside the respective bore, and each lower section, such as at boring 25a, begins at the bottom surface or underside 20b and ends inside the respective bore. Fig. 1, Fig. 4, Pg. 7, second paragraph)

wherein each of the plurality of rounds of blank ammunition of the first type can be inserted into any of the plurality of bores so that at least a portion of each of the plurality of rounds of blank ammunition of the first type lie inside the upper, middle, and lower sections of the respective bore at the same time;

(Present application: Each of the plurality of rounds of blank ammunition of the first type, such as round 80 can be inserted into any of the plurality of bores, such as 23a, so that at least a portion of each of the plurality of rounds of blank ammunition of the first type lie inside the upper, middle and lower sections, such as borings 25c, 25b, and 25a of the respective bore such as 23a, at the same time. Fig. 1, Fig. 4, pg. 5, second paragraph)

wherein each of the plurality of rounds of blank ammunition of the second type can be inserted into any of the plurality of bores so that at least a portion of each of the plurality of rounds of blank ammunition of the second type lie inside the upper, middle, and lower sections of the respective bore at the same time;

(Present application: Each of the plurality of rounds of blank ammunition of the second type, such as 81, can be inserted into any of the plurality of bores, such as 23a, so that at least a portion of each of the plurality of rounds of blank ammunition of the second type, 81, lie inside the upper middle and lower sections, such as borings 25c, 25b, and 25a of the respective bore such as 23a at the same time. Fig. 1, Fig. 4, pg. 5, second paragraph)

and wherein each of the plurality of rounds of blank ammunition of the first type is the same, each of the plurality of rounds of blank ammunition of the second type is the same, and each of the plurality of rounds of blank ammunition of the first type differ in size from each of the plurality of rounds of blank ammunition of the second type.

(Present application: Each of the plurality of rounds of blank ammunition of the first type, such as 80, can be the same, and each of the plurality of rounds of ammunition of the second type, such as 81 can be the same, and each of the plurality of rounds of blank ammunition of the first type, 80, differ in size from each of the plurality of round of blank ammunition of the second type, such as

81. Pg. 5, second paragraph, Fig. 11 and Fig. 12).

12. The pyrotechnic device of claim 11 wherein

each of the plurality of rounds of blank ammunition of the first type is an M30 round and
each of the plurality of rounds of blank ammunition of the second type is an M31 round.

(Present application: A pyrotechnic device or apparatus 10 is disclosed. Pg. 3, lns. 8-15. Each of the plurality of rounds of blank ammunition of the first type, such as 80, may be an M30 round, and each of the plurality of rounds of blank ammunition of the second type may be an M31 round. Pg. 5, second paragraph).

13. The device as claimed in Claim 4 further comprising

an electronic housing comprised of circuitry;

wherein the circuitry provides for self-testing.

(Present application: A electronic housing 70 is provided comprised of circuitry. Pg. 7, first paragraph. The circuitry provides for self-testing. Pg. 14, last paragraph – pg. 15, second paragraph)

14. The device as claimed in Claim 4, further comprising

an electronic housing comprised of circuitry;

wherein the circuitry provides the capability of fifteen programmable firing sequences
and igniting one or more of the plurality of blank ammunition rounds.

(Present application: A electronic housing 70 is provided comprised of circuitry. Pg. 7, first paragraph. The circuitry provides the capability of fifteen programmable firing sequences and igniting one or more of the plurality of blank ammunition rounds. Pg. 14, last paragraph – pg. 15, third paragraph)

15. The device as claimed in Claim 4, further comprising

an electronic housing comprised of circuitry wherein

the circuitry can perform a special ignition application.

(Present application: A electronic housing 70 is provided comprised of circuitry. Pg. 7, first paragraph. The circuitry can perform a special ignition application. Pg. 14, last paragraph – pg. 15, third paragraph, Pg. 11, first paragraph, Pg. 17, paragraph 3)

21. A pyrotechnic device for simulating weapons firing and/or hit indications, comprising
a magazine comprised of a plurality of receptacles for receiving a corresponding
plurality of rounds, the magazine having an underside surface;

(Present application: The magazine 20 has an underside surface 20b.
Fig. 4, pg. 7, second paragraph).

wherein a plurality of safety interlocks are located on the underside surface of the
magazine;

(Present application: A plurality of safety interlocks 28 are located on the
underside surface 20b of the magazine 20. Fig. 7, pg. 6, last paragraph – pg. 7,
first paragraph).

further comprising a top plate having a top surface on which are located a plurality of
contact pads which correspond in number to the plurality of safety interlocks;

(Present application: A top plate 30 having a top surface on which are
located a plurality of contact pads 90 which correspond in number to the plurality
of safety interlocks 28. Fig. 3, Fig. 7, p. 6, last paragraph – pg. 7, first
paragraph).

wherein the magazine can be placed on top of the top plate so that the underside
surface of the magazine lies on top of the top surface of the top plate and each of the plurality
of safety interlocks on the magazine comes in ohmic contact with a corresponding one of the
plurality of contact pads on the top plate;

(Present application: The magazine 20 can be placed on top of the top
plate 30 so that the underside surface 20b of the magazine 20 lies on top of the
top surface of the top plate 30 and each of the plurality of safety interlocks 28 on
the magazine 20 comes in ohmic contact with a corresponding one of the
plurality of contact pads 90 on the top plate 30. Fig. 1, Fig. 3, Fig. 7, p. 6, last
paragraph – pg. 7, first paragraph).

and wherein the pyrotechnic device does not arm when power is applied unless each of
the plurality of safety interlocks on the magazine is in ohmic contact with a corresponding one

of the plurality of contact pads on the top plate.

(Present application: The pyrotechnic device or apparatus 10 does not arm when power is applied unless each of the plurality of safety interlocks 28 on the magazine 20 is in ohmic contact with a corresponding one of the plurality of contact pads 90 on the top plate 30. Fig. 1, Fig. 3, Fig. 7, p. 6, last paragraph – pg. 7, first paragraph)

22. The pyrotechnic device of claim 21 further comprising:-

a latching device which latches the magazine to the top plate, wherein the latching device causes each of the plurality of safety interlocks on the magazine to come in ohmic contact with a corresponding one of the plurality of contact pads on the top plate.

(Present application: A pyrotechnic device or apparatus 10 is disclosed. Pg. 3, lns. 8-15. A latching device such as one or more of latch keepers 21a and 22a and latch-to-latch assemblies 62 and 60 latch the magazine 20 to the top plate 30, such that each of the plurality of safety interlocks 28 on the magazine 20 come in ohmic contact with a corresponding one of the plurality of contact pads 90 on the top plate 30. Fig. 1, Fig. 3, Fig. 7, p. 6, last paragraph – pg. 7, first paragraph)

23. The pyrotechnic device of claim 21, further comprising

an electronic housing including circuitry; wherein

the circuitry is located on a circuit board, and the circuitry comes in ohmic contact with the plurality of contact pads on the top plate .

(Present application: A electronic housing 70 is provided comprised of circuitry. Pg. 7, first paragraph. The circuitry comes in ohmic contact with the plurality of contact pads 90 on the top plate 30. Pg. 6, last paragraph – pg. 7, first paragraph).

24. The pyrotechnic device of claim 23, wherein

a remote control signal can be used to operate the circuitry and thereby operate the pyrotechnic device.

(Present application: A remote control signal can be used to operate the circuitry and thereby operate the pyrotechnic device. Pg. 16, paragraph 1).

29. The pyrotechnic device of claim 8 further comprising

a plurality of non-conductive washers, each of which is placed around one of the plurality of transfer posts, wherein there is at least one non-conductive washer for each of the plurality of transfer posts:

(Present application: A plurality of non-conductive washers is disclosed, such as washer 310a, each of which is placed around one of the plurality of transfer posts, such as transfer post 308a, wherein there is at least one non-conductive washer, such as 310a, for each of the plurality of transfer posts, such as 308a. Pg. 8, second paragraph – pg. 9, first paragraph, Figs. 3, 9, 10)

wherein there are a plurality of bored holes in the electronic housing:

(Present application: There are a plurality of bored holes, such as 71a, in the electronic housing 70. Pg. 9, first paragraph, Fig. 10.)

wherein each transfer post lies at least partially inside of one of the plurality of bored holes in the electronic housing, wherein there is one transfer post for each bored hole:

(Present application: Each transfer post, such as 308a lies at least partially inside of one of the plurality of bored holes, such as 71a in the electronic housing 70, wherein there is one transfer post, such as 308a, for each bored hole, such as 71a. Fig. 3, Fig. 10)

and wherein each of the plurality of non-conductive washers forms a seal between the top plate and the electronic housing so that no liquid can enter the electronic housing through any of the plurality of bored holes.

(Present application: Each of the plurality of non-conductive washers, such as 310a, forms a seal between the top plate 30 and the electronic housing 70 so that no liquid can enter the electronic housing 70 through any of the plurality of bored holes, such as 71a. Pg. 8, last paragraph – pg. 9, first paragraph, Fig. 3, Fig. 10).

30. The pyrotechnic device of claim 29 wherein

each of the plurality of non-conductive washers is a neoprene washer.

(Present application: Each of the plurality of non-conductive washers, such as 310a, may be a neoprene washer. Pg. 10, second paragraph)

III. Conclusion:

Favorable reconsideration of this application is requested.

Respectfully submitted,



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